

posed promontory like Nahant, or an island like Monhegan, but seems singularly out of place in a landlocked bay. No similar colony has been found within many miles, and we must conclude that the rush and fall of the water over the rocks gives conditions so like those of the surf-beaten shores, that the plants whose home is in the latter, find themselves quite comfortable in the former.

As the conditions are largely artificial, it is probable that the colony is of comparatively recent origin, but there is no difficulty in supposing that spores are continually carried up and down by the tide, only the lack of suitable conditions preventing their obtaining a foothold in other localities.

SOME ANTENNARIAS OF NORTHERN NEW ENGLAND.

M. L. FERNALD.

THE synopsis of The Genus *Antennaria* in New England¹ published by me some months ago might more appropriately have been called "The Genus *Antennaria* in Central and Southern New England," for, at that time, little was known of the species in the extreme northern portions of these states. During the past June and July, however, collections were made by Dr. George G. Kennedy, Mr. Emile F. Williams, and others about Willoughby, Vermont, and in the White Mountains; and in June by the author in central and northern Maine. The observations then made show that in a large portion of Maine, New Hampshire, and Vermont, the genus *Antennaria* is represented largely by species uncommon or wanting in southern New England; and, furthermore, that the species commonest about Boston and Providence are rare or quite unknown in our more northern sections.

The range of *Antennaria Parlinii* has been extended slightly north of its formerly recorded limit. This plant was found in June in the Piscataquis valley (Maine), by a woodland stream in Foxcroft; and the large-leaved var. *ambigens* was collected on the gravelly wooded esker by the Penobscot in Orono.

Antennaria neglecta, the commonest species in southern New England, is rare in central Maine, and, though detected at various stations, even to the extreme northern boundary of the state, it is certainly an unusual plant north of Bangor.

¹ Proc. Bost. Soc. Nat. Hist. xxviii. 237-249.

Antennaria canadensis, which is rare south of Boston, is, with the possible exception of *A. neodioica*, the commonest species of northern New England, passing occasionally into the larger-headed and more attractive var. *Randii*.

The northern *Antennarias* of greatest interest, however, are certain forms characteristic of the regions where they grow, but either misinterpreted or quite unknown until the past summer. A large suite of specimens secured at various points along the line of the Bangor and Aroostook railroad show conclusively that the Mount Desert plant, formerly treated by me as a variety of *A. neglecta*, the Maine specimens then called *A. campestris*, and the northern New England forms called by me *A. neodioica*, var. *petaloidea*, are in reality extreme forms of the same species. This plant was seen in great abundance in June throughout Aroostook County and at more southern stations in Piscataquis and Penobscot counties, where it is far more abundant, in fields and on grassy slopes, than the related *A. neglecta*. Specimens have been referred to Dr. Rydberg who pronounces them very different from his western *A. campestris*. When the Maine plant was provisionally referred to that species it was known only from autumnal leaf-specimens; but now, with abundant flowering material at hand, there is no need of further confusion between them. *A. campestris*, confined for the most part to the prairies west of the Mississippi, is a very low plant, rarely becoming 1 dm. high; on the other hand, the northeastern plant is often more than 4 dm. high. Low early forms of what is apparently immature *A. neglecta* closely simulate the western *A. campestris*, but such plants have been carefully observed by Mr. J. C. Parlin, who finds that they later develop the characteristic racemose inflorescence of the eastern *A. neglecta*.

From *Antennaria neglecta*, with which the plant was formerly placed, field-observations show this northern plant to be very distinct. In June, when this species was in flower, its *corymbose* heads gave to the fields a *tawny* or *brownish-white* color; while, in neighboring colonies, the old and often over-ripe *racemes* of *A. neglecta* formed patches of *purplish-white* or sometimes almost *crimson*. This color-character alone may not prove of absolute constancy; but the *corymbose* inflorescence and much later flowering season, as well as its greater abundance in northern New England where the early *A. neglecta* is a comparatively rare plant, distinguish it very clearly from that species.

From *A. neodioica*, with which poorly developed specimens of this

plant were associated, it is quickly distinguished by its slender procumbent stolons which are generally elongated as in *A. neglecta* (though sometimes scarcely developed at the flowering season), and its more cuneate or spatulate, hardly obovate, leaves.

The plant should take as its specific designation the name first applied to it as a variety: —

Antennaria petaloidea. Stems slender, 2 to 4.5 dm. high, very floccose-pubescent; stolons as in *A. neglecta*, slender, prostrate, generally elongated, bracteate throughout except at the leafy tip: basal leaves from spatulate to cuneate-obovate, scarcely with distinct petioles, at first appressed-silky or somewhat arachnoid above, finally glabrate, or often with a more or less permanent narrow white-pubescent border; stem-leaves small, linear-lanceolate, remote: heads corymbose, with the lower pedicels sometimes much elongated: involucre of the pistillate plant 8 to 10 mm. high; bracts linear or linear-lanceolate, brown or green and brown below, the blunt outer ones lanate at base, the inner narrower, longer and acute, all with white petaloid tips, or sometimes with the brown chartaceous portion extending upward to the tip: staminate plant unknown. — *A. neodioica*, Greene, var. *petaloidea*, Fernald, Proc. Bost. Soc. Nat. Hist. xxviii. 245. *A. neglecta*, Greene, var. *subcorymbosa*, Fernald, l. c. 246. *A. campestris*, Fernald, l. c. 247, not Rydberg. In fields and on grassy banks, or rarely in open woods, northern New England, flowering in June and early July. The following specimens are referred here — Maine: Fort Kent, June 15, 1898, no. 2384; Ashland, June 13, 1898, no. 2386; Blaine, June 23, 1898, no. 2385; Houlton, August, 1897; Island Falls, June 10, 1898, nos. 2387, 2388; Foxcroft, June 6, 1898, nos. 2389, 2390, 2391; Milo, September, 1897; Orono, June 4, 1898, no. 2392 (*M. L. Fernald*); Seal Harbor, Mount Desert Island, July 9, 1897 (*E. L. Rand*); Farmington, June, 1897 (*C. H. Knowlton*); New Hampshire: Forest Hill, Echo Hill, Butter Hill, etc., Franconia, June 5 to 15, 1897 (*Edwin Faxon*); Jaffrey, May 31, 1897 (*E. L. Rand & B. L. Robinson*, nos. 427, 428); Vermont: Willoughby, June 9, 1898 (*G. G. Kennedy & E. F. Williams*).

Var. scariosa. Involucral bracts narrow, long-attenuate, scarious and lucid; the outer sometimes broader and becoming petaloid. — With the species and passing to it; forming extensive carpets on dry open hillsides or on pasture-knolls, Orono, Maine, collected by the author, June 3, 1898, nos. 2395, 2365; and on a dry sandy bank, Foxcroft, June 6, 1898, no. 2394.

A handsome large form of *A. neodioica*, first collected by Mr. Rand on Mount Desert Island, and subsequently by Dr. Kennedy at Willoughby, is so striking as to merit distinction as

A. NEODIOICA, Greene, var. **grandis.** Plants large, 3 to 5 dm. high; leaves and stolons as in the species, but rather larger; the basal leaves,

when well developed, 4 or 5 cm. long; the cauline oblanceolate to oblong-lanceolate, mostly large, 3 or 4 cm. long, 5 to 8 mm. wide (in occasional specimens as small as in the species): heads large and full, as broad as high: involucre 6 to 8 mm. high, the bracts purple, brown, or green below, with whitish petaloid or hardly scarious tips; the outer blunt or acute, the inner attenuate. — Somesville, Mount Desert Island, July 1 and 2, 1897 (*E. L. Rand*); Long Pond road, Willoughby, Vermont, July 11, 1898 (*G. G. Kennedy*).

A unique species with lemon-tinged heads is characteristic of the river-cliffs and ledges along the Mattawamkeag river in southern Aroostook county, Maine. This plant, from its usual habitat, may be called:

A. rupicola. Stems slender, 1.5 to 3 dm. high, invested with loose flocculent pubescence; stolons very numerous, short and assurgent, leafy throughout: basal leaves from oblanceolate to narrowly obovate-spatulate, mucronate, 1 to 4 cm. long, beneath densely white-tomentose, above gray with loose and somewhat arachnoid hairs, with age sometimes becoming glabrate; cauline leaves lanceolate, mucronate, dark green, arachnoid-pubescent beneath, slightly arachnoid or glabrate above, those midway up the stem 2 or 3 cm. long: heads rather compactly clustered; the pedicels generally shorter than the heads: involucre of pistillate plant 8 to 10 mm. high; bracts in 4 or 5 series, with conspicuous yellowish-white firm papery tips much exceeding the dark bases; the short outer obtuse erose ones oblong with dark green and brownish slightly arachnoid or glabrate bases; the innermost longer ones lance-linear, acute: staminate plant unknown. — Abundant in crevices of calcareous-slate ledges and on rocky banks along the Mattawamkeag River, Island Falls, Maine; the type material collected by the author June 9, 1898, no. 2361. A very attractive species, in habit somewhat resembling *A. neodioica*. The leaves, however, are much narrower than in that species, and scarcely if at all differentiated into blade and petiole. The firmer yellowish-white bracts of the involucre, in texture resembling those of *Gnaphalium decurrens*, are quite unlike the bracts of any other known eastern species.

A. FALLAX, Greene, *Pittonia*, iii. 321, is a very puzzling plant. In its bright-green basal leaves and its large heads and inflorescence it strongly resembles *A. Parlinii*; but the plant is quite glandless, the young basal leaves are generally slightly arachnoid above, and the cauline leaves are reduced as in *A. plantaginea*. The bracts of the involucre resembling those of *A. Parlinii*, but with the outer generally broader and more petaloid, are either purple or greenish. This plant, in its characters somewhat intermediate between *A. Parlinii* and *A. plantaginea*, though nearer the former, is much more abundant in central Maine than either of those species. The following New England specimens have been examined: Sandy field, Milo Junction,

Maine, June 6, 1898 (*M. L. Fernald*, no. 2344) ; gravelly bank, Orono, Maine, June 4, 1898 (*M. L. Fernald*, nos. 2342, 2345) ; hillsides, Jaffrey, New Hampshire, May 31, 1897 (*E. L. Rand & B. L. Robinson*, no. 424) ; Willoughby, Vermont, June 10, 1898 (*G. G. Kennedy & E. F. Williams*).

NOTEWORTHY PLANTS AT EXETER, MAINE.

L. H. BAKER.

A collection made at Exeter, Maine, during the summer of 1898, by Miss Florence Grey, contains the following plants of interest, introducing one species from Europe, extending the range of two others and confirming an old report of a fourth.

CENTAUREA SCABIOSA L., which seems to be newly introduced from the Old World, is quite distinct in its general appearance from the species more commonly met with in New England, — *C. Cyanus*, *C. nigra* and *C. Jacea* — the involucre being more globose, the coloring of the scales confined to the extreme tips and upper margins and the leaves deeply pinnatifid. A more detailed description of the species follows : —

Stem 2°–3°, simple or sparingly branched, striate, scurfy or somewhat pubescent. Leaves deeply pinnatifid, bearing scattered hairs beneath. Heads 1½' to 2' broad, solitary at the end of the stem or branches. Involucre globose, blade of the bracts lanceolate or ovate, only the extreme margins and tips colored dark brown or black. Fimbriation present on all the bracts, hardly equal to the width of the blade. Flowers purple, the outer enlarged and ray-like. Achenes pubescent. Pappus of copious, unequal bristles, longer than the achene.

CORONILLA VARIA L., which has previously been reported in Maine only at Bucksport (where found by Mrs. A. F. Chase), and which proves to have been well established in this station for some twenty years.

POTENTILLA RECTA L., the range of which is extended in Maine from the vicinity of Portland.

GALIUM BOREALE L., which may now be reinstated in the Maine lists from which it was recently dropped by reason of there being no record of a definite station in the state.

The section in which Miss Grey's collection was made lies twenty miles northwest of Bangor and some six miles from any railway.